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ABSTRACT

As increasing numbers of students with diverse needs are included in general education, the preparation of preservice teachers needs to be reformed. Traditional curriculum, methods, and management courses need revision as the population in general education classes changes. With the trend toward full inclusion, the typical school classroom includes students who have learning disabilities, physical impairments, medical needs, visual/auditory acuity disorders, and/or attention deficits. Skill levels range from gifted/talented to moderate/severe delays, including students "at risk" due to cultural differences, environmental deprivation, stress, and health issues. Teacher educators need to revise traditional teacher education course content to include alternative instruction and assessment practices that provide all students with the curricular and program modifications they need. Teacher preparation course content should emphasize best practices that are interactive, authentic, and performance-based when dealing with students who have special needs. In order to effectively model these innovative, state-of-the-art practices, teacher educators are moving away from the lectern and utilizing more interactive teaching methodology that is both multidimensional and multisensory through demonstration, simulation, role playing, and cooperative group activities. (Contains 25 references.) (Author/SM)

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Teacher Education Reform: Promoting Interactive Teaching Strategies and Authentic Assessment for Instructing an Increasing Diverse Population of Students

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Teacher Education Reform: Promoting Interactive Teaching Strategies and Authentic Assessment for Instructing an Increasing Diverse Population of Students

The recent and growing trend in education is to include students with disabilities in regular education classrooms. According to the U.S. Department of Education (1995) there are a steady number of students with disabilities enrolling in general education classes for a large portion of the day. The varying skills and abilities of these students increase the demands on teachers with regard to planning and instruction (Lenz, Schumaker, & Deshler, 1991). Schools of education, in order to provide their pre-service teachers with state-of-the-art programs, need to include in both the general and special education curriculum programs, instruction in teaching and planning methods which address the issue of inclusion. Pre-service teachers need to be able to adapt standard teaching techniques, modify standard materials and curriculum and adjust standard classroom management techniques in order to effectively teach students with diverse needs.

Increasingly, general education teachers find that besides their typically achieving students, their classes have several students who have learning disabilities, physical impairments, medical needs, visual or auditory acuity disorders, or attention deficits. The skill levels may range from the gifted and talented to the moderately/severely disabled and often include those "at risk" due to cultural differences, environmental deprivation or stress, health issues, etc.. In order to be adequately prepared for this diverse population of students, pre-service teachers need to be familiar with a variety of teaching strategies and alternate assessment measures required to provide all students with the curricular and program modifications they need. Typically, this means a change from traditional instructional and

ABSTRACT

With increasing numbers of students with diverse needs included in general education, the preparation of preservice teachers needs to be reformed. Traditional curriculum, methods and management courses need to be revised as the population in general education classes is changing. With the trend toward full inclusion, the typical class includes students with learning disabilities, physical impairments, medical needs, visual/auditory acuity disorders, and/or attention deficits. Skill levels range from gifted/talented to moderate/severe delays, including students "at risk" due to cultural differences, environmental deprivation/stress, health issues, etc.. Teacher educators need to revise traditional teacher education course content to include alternative instruction and assessment practices to provide all students with the curricular/program modifications they need. Teacher preparation course content should emphasize best practices which are interactive, authentic and performance-based when dealing with students who have special needs. In order to effectively model these innovative, state-of-the-art practices, teacher educators are moving away from the lectern and demonstrating more interactive teaching methodology that is both multidimensional and multisensory through demonstration, simulation, role playing and cooperative group activities.

Teacher Education Reform: Incorporating Teaching Strategies for Dealing with an Increasing Diversity Population of Students

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evaluative methods to those that are multi-sensory, individualized, pragmatic, and relevant to common practice or real-life situations, specifically, activities which have direct meaning and can be incorporated into daily living experiences. Pre-service teachers need, not only, to develop competence in the delivery of pedagogically sound instructional practices which have driven teacher education programs for decades but they need to acquire skill in assessing individual needs. They need to adapt their instructional methods and materials to meet the specific needs of all students, recognizing their strengths and weaknesses. Specifically, they need to apply a repertoire of assessment measures which will help them ascertain students' individual needs, coordinate assessment results with appropriate teaching strategies, monitor the success of remedial interventions, and modify instructional procedures, as needed. Pre-service teachers need not only to understand the etiology of students' problems and be able to recognize their specific instructional needs but be able to develop and implement effective diagnostic-prescriptive teaching strategies.

All educators, from those teaching preschoolers to the university professor instructing the adult student, are finding themselves teaching students with a much greater range of abilities, aptitudes and prior knowledge backgrounds. They are searching for ways to improve the quality and productivity of their instruction. Elementary and secondary level teachers are finding that they need to be innovative and non-traditional in order to reach and teach the diverse population of students that are increasing in the mainstream. Practicing teachers are voicing concern about their lack of preparation to address the range of learning styles, to follow the remedial recommendations suggested by specialists and to modify their teaching and evaluative methods to accommodate the wide range of individual needs.

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Likewise, college faculty are also finding that they are expected to cultivate skills in different methods of teaching and assessment, areas in which they had little or no preparation. Professors are finding that they need to move away from the traditional lecture mode, to become more creative, inclusive and flexible in their teaching and evaluative styles. It is no longer sufficient for college instructors to go to the lectern to share the in-depth knowledge of their field of specialty and to "profess" their substantial base of knowledge to classrooms of motivated students thirsty for this new learning. They must understand the broad base of learning styles and needs of college students and address this diversity effectively to facilitate student learning (Anderson and Adams, 1992).

Policy on Inclusive Program Modifications

The Council for Exceptional Children (CEC), the leading special education organization, has developed policy on inclusion which encourages all educators and other professionals to work together to create educational programs and experiences that are collegial, inclusive and responsive to student diversity (CEC, 1998). Interactive learning environments advance the goals of CEC and the major national educational organizations. This is accomplished by providing activities which promote higher order thinking, encouraging students to seek and create knowledge for themselves and others and providing opportunities for student constructivity of knowledge so that they will be excited and motivated by learning. These goals encourage students to function as teachers as well as active learners and to accept responsibility for their learning. Interactive learning approaches promote these goals by providing environments where

communication is encouraged and facilitated, where feedback is immediate and detailed, and where learning becomes a collaborative and social experience (Groccia, 1997).

Developing Interactive Learning Environments

Interactive learning approaches are not new concepts in the field of education. Early advocates of interactive learning approaches include Maria Montessori and John Dewey (Dewey, 1963) who recommended that schools begin to include more active and involved teaching approaches (Sutherland, 1996). A major component of the interactive process is cooperative learning which can be implemented effectively in classes from preschool through graduate school programs. This interactive learning approach can be used for any subject, in a variety of settings. Instructors can structure lessons so that students can master the assigned material by working collaboratively in small groups in order to maximize their own and each other's learning. Cooperative learning activities promote positive interaction to accomplish shared goals rather than foster interpersonal competition. They fosters positive interdependence, face-to-face positive interaction, individual accountability, social skills, group processing and development of problem solving skills. Cooperative group learning empowers members by helping them feel capable and committed. The cooperative learning approach motivates and promotes learning by (a) enabling students to translate the teacher's language into "kid language" for their group members; (b) reinforcing mastery of skills by having students teach their peers; (c) providing opportunities for students to provide individual attention and assistance to each other; and (d) fostering a "we're all in this together" attitude in which students are more willing to take risks and make comments or ask questions which they would not attempt in large group, less collaborative settings

(Slavin, 1998). This method of active learning can be used to teach specific content, to ensure active cognitive processing of information during a lecture or discussion and can provide long-term support and assistance for academic progress (Johnson, Johnson, and Smith, 1991).

Cooperative learning researchers and practitioners have shown that positive peer relationships are essential for success in college while isolation and alienation are the best predictors of failure. Studies indicate that the two main reasons why students drop out of college is their failure to establish a social network of friends/classmates and failure to become actively involved in classes (Tinto, 1994). Interactive learning activities promote cooperative interaction with peers, which involve problem solving and talking through issues. This type of participation, interaction and encouragement is positively correlated with improved critical thinking (Astin, 1992). Bonwell and Eison (1991) define active learning as anything that "involves students in doing and thinking about the things they are doing". This promotes and focuses on the metacognitive aspects of learning.

Authentic Evaluation Measures

Another major area of educational reform is the development and use of new forms of assessment which are directly related to instruction. CEC advocates the promotion of performance assessments which are multi-dimensional instruments that can cut across curriculum, have the potential to be powerful instructional tools and can be useful as a means of accountability. In 1992, the Division of Innovation and Development in the U.S. Department of Education's Office of Special Education Programs (OSEP) and the

ERIC/OSEP Special Project of the Council for Exceptional Children adopted the term performance assessment for the range of evaluative measures that include performance assessment, authentic assessment, alternative assessment and portfolio assessment (Coutinho & Malouf, 1994).

Traditional assessment typically includes multiple-choice, true/false, written essays or oral examination (U.S. Congress, Office of Technology, 1992). The use of traditional assessment has been frequently criticized in recent years due to its lack of integration between evaluation and instruction; its heavy emphasis on discrete facts and factual knowledge; the forced selection of one correct answer rather than the option for exploration of multiple possibilities; the requirement for short, specific answers; and the requirement that students work independently and individually (U.S. Congress, Office of Technology Assessment, 1992; Linn, Baker, & Dunbar, 1991). Another criticism of traditional assessment is that this type of evaluation is innately unfair to students with diverse cultural backgrounds and learning styles (Rothman, 1991). According to Tierney (1998), the external control of testing and standardization of testing procedures tend to perpetuate teacher and student disenfranchisement. More effective methods of evaluating student progress are performance based assessments which involve ongoing monitoring of students by sampling reading and writing behaviors, curriculum-based measurement, maintaining portfolios and journals, holding periodic conferences and keeping anecdotal records.

Research studies indicate that there is strong support for a movement away from standardized assessment measures toward performance based assessment (Tierney, 1998). The benefits inherent in performance assessment include the potential for direct linkage

between instruction and evaluation. State-of-the-art practices which integrate instructional and evaluative methods include holistic scoring, rubrics, portfolios, student self-assessment and exhibition, conferencing, learning logs, kid watching, work samples, reflective and dialogue journals, curriculum based assessment, and peer editing. With this type of assessment, students can demonstrate their "authentic" knowledge, specifically, the skills and concepts that are meaningful and motivational to the student and are related to functioning in the real world beyond the school walls. When using performance assessment, pupils are required to create an answer or product that demonstrates their knowledge of skill (U.S. Congress Office of Technology. 1992). This method which integrates instruction with assessment represents many of the characteristics expounded to be best practices in the field of education. Incorporation of concepts, such as, individualization, multi-sensory and multi-dimensional instruction, authenticity, mastery learning, etc. promote many of the theories advocated by Vygotsky, Ausubel, Piaget, and Bloom. They also promote the goals of the National Council for Teachers of Mathematics, the International Reading Association and the National Council of Teachers of English, premier educational associations which are focused on raising educational standards by promoting higher order thinking skills.

Reauthorization of IDEA Impact on Teachers

Policies now mandated by the Reauthorization of the Individuals with Disabilities Education Act, will require regular education teachers to be active participants in the classification of students who qualify for special education services and in the development of their educational planning and programming. Teachers need to understand and be able to use appropriate evaluation measures in order to (a) identify students who require specialized

assistance beyond that provided in general education and (b) provide useful information for goal setting, intervention planning, and program evaluation (Shinn & Habedank, 1992). They need to understand the pre-referral and referral process which requires that they attempt to modify "at risk" students' programs, learning environments, curricular expectations and instructional approaches. Teachers are now required to document that they have attempted to make accommodations before referring students to be evaluated by multi-disciplinary teams to determine eligibility for special education services. General and special education teachers will now need instructionally relevant information and strategies to employ (Ysseldyke, Christenson, & Kovalesik, 1994). The Reauthorization of IDEA mandates that general education teachers be active members of the professional team which decides whether students meet the criteria required for classification, determines the appropriate program and develops a prescriptive educational plan. Teachers will be required to develop prescriptive rather than descriptive instructional approaches (Ysseldyke et al., 1994). Pre-service teachers must be taught how to develop appropriate learning objectives and learn how to customize the instructional and evaluation process for students.

Components for Instructional Change

Pre-service teachers must learn how to design, implement and assess active learning activities in order to engage pupils actively in the learning process. By providing examples and through the actual learning experiences they create, teachers facilitate the process by which students become independent and self-directed learners.

According to Howard Gardner (1993) human intelligence is multidimensional. It is becoming evident that many types of intelligences are not fixed but can be enhanced or diminished. Pre-service teachers need to learn how to design learning activities which address, accommodate, engage and enhance the multiple intelligences of their students. They need to recognize that students have different learning styles and optimal modes for learning and develop skill in designing, implementing and assessing learning activities that reflect and take full advantage of students' dominant learning style, whether visual, auditory, kinesthetic or multi-sensory.

The importance of interdisciplinary instruction needs to be promoted. Teaching each academic content area separately promotes fragmentation rather than integration of knowledge. Teachers need to make learning connected and meaningful by integrating rather than segregating instruction. Pre-service teachers need to develop competence in promoting thematic, problem-based and project-based learning units. Critical thinking and problem solving skills also need to be the focus of pre-service training so that our future educators not only enhance their critical, higher-order thinking and problem solving capabilities but learn techniques to foster these skills in their students. Pre-service teachers must model critical thinking and problem solving skills and create learning activities which will develop these capabilities for the pupils in their classes.

Technology is another critical skill as pre-service teachers need not only to become technologically literate, they must be able to utilize technology to achieve specific learning outcomes and individualize the learning process of the student through the integrated use of technology. Pre-service teachers must learn to access and retrieve information from various

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sources, such as the Internet, and decipher what information is relevant and applicable to assigned learning tasks. Students now have the capacity to access the World Wide Web to communicate directly with scientists, historians, poets, mathematicians, etc.. Through distance learning they will be able to travel to remote locations through electronic field trips. Both educators and their students must learn how to apply and use their knowledge to solve problems of increasing complexity.

With the increase in inclusive programming, regular education and special education will be required to work together to ensure effective programming for children with special needs. In order to facilitate this close professional partnership, pre-service teachers need to develop good interpersonal communication skills. Beyond developing proficiency in assessment and academic programming, pre-service teachers must learn to work effectively with students who are acting out or behaving aggressively. They need to learn conflict resolution strategies and social problem solving techniques and be able to teach them to their students. They need to be able to identify various types of problems, such as child abuse, drug and alcohol usage and how to deal with these situations by becoming proficient in active listening and basic counseling skills.. Educational legislation, such as P.L. 94-142, IDEA and the recent Reauthorization of IDEA stress the necessity for active parent involvement. The school reform movement promotes teacher-parent partnerships as they foster good communication and relationships between school and home which is central to student success. It is also important to stress the importance of maintaining good communication through phone calls, conferences, written notes, e-mail, and , when necessary, home visits. Pre-service teachers must also learn to create learning

environments which celebrate diversity and to deal effectively with racial and ethnic differences among students and their families.

Pre-service teachers need to develop effective communication skills which include, collaboration, consultation, problem solving, consensus building and conflict negotiation in order to deal effectively with colleagues, parents, administration and specialists. In order to develop competence and confidence in these pertinent skills, practice through simulations and role playing can be productive.

Impact on Schools of Education

Teacher educators need not only be knowledgeable regarding state-of-the-art instructional and evaluative methods, they should be modeling these procedures in their college classrooms. The use of lecture continues to be the most prevalent teaching method in secondary and higher education classes, despite overwhelming evidence that it produces the lowest degree of retention for most learners. Research indicates that students of all ages learn best when their intellectual engagement is high. According to Sousa (1995), 73% of college instructors use lecture as their primary teaching mode yet the average retention rate, over a twenty-four hour period, for material covered during a lecture is only 5%. When students read text, they remember 10% but when an auditory-visual presentation is made, retention increases to 20%. As classes become more interactive and demonstration is used, retention increases to 30%. In a discussion group, when students are more actively involved in sharing ideas, they retain 50% of the material. A major increase, up to 75%, in students' ability to recall class material, is evident when they practice by doing. The most effective

way of retaining new material is when students teach others (peer teaching) and can immediately put newly acquired knowledge to use, with 90% mastery noted.

According to Groccia (1997), 73% of class time is spent in professors lecturing their classes. A standard lecture teaching style (primarily teacher-talk) and evaluation methods which measure mastery of text reading and lecture notes through subjective or objective assessment do not provide examples of teaching models and assessment measures that the classroom teacher could use with special needs or "at risk" students. Students, at the elementary, secondary and postsecondary level, process, retain and recall what they have learned best when instruction is pragmatic, interactive and applied. Research clearly supports the fact that students are more likely to internalize, understand and remember material learned when they are actively engaged in the learning process and when material is introduced through a variety of modes (Anderson et al, 1992 and Johnson, et al, 1991).

As teacher educators modify more traditional methods and materials courses to incorporate innovative instructional and evaluative methods for inclusive settings, their effectiveness increases when they promote these strategies through modeling. By incorporating instructional methods, such as interactive learning, into their instructional style and using performance assessment as a means of evaluating understanding and, ultimately, mastery of skills and concepts, they are clearly demonstrating how effective and innovative instructional approaches can be utilized in a classroom. In this more flexible and adaptive approach, individual cognitive styles can be addressed. The literature supports the influence of multiple intelligences on learning and how optimal use of students' cognitive styles affect classroom functioning and mastery of new skills and concepts. Although teachers tend to

teach to the cognitive style that matches their own, in order to meet the varying learning preferences of the children in their classes, they should be sensitive to the ways that students receive, retain and respond to information. Lessons should be designed which address all preference styles and teach to both brain hemispheres. Interactive learning and performance assessment methods can easily provide students with opportunities to incorporate their learning strengths when assigned a project. Students will use all five senses to collect information from the environment, yet they tend to develop preferences for gathering information. Most people are visual learners and benefit most from visual presentation and strategies, when information is illustrated visually, such as using concept maps, chalkboards and overhead projectors. Auditory learners function best when they are allowed to verbally interact with the teacher or other students to discuss new learning and are given the option of presenting oral rather than written reports. Kinesthetic learners prefer touch or whole-body involvement. Interactive learning approaches allow direct experiences through a variety of activities, such as role playing and simulations. These approaches teach students to use generalization and perception which helps promote future transfer of learning by providing opportunities for hands-on activities. This fosters an educational climate conducive to learning by making tasks realistic, meaningful and motivating.

The benefit of incorporating active learning approaches into curriculum is two-fold. These progressive methods promote effective learning and retention of information in an increasingly diverse population of college students. They also provide a model of good instructional practice for future teachers who are looking to their professors for ways to address the needs of the students with whom they will soon be engaged. Research clearly

suggests that individuals learn best by being actively involved in the learning activity. This is true for all students, especially, those with special needs who require opportunities to experience, practice, and get immediate and ongoing feedback from teachers and peers. If interactive learning is proven to be so productive, why not incorporate this teaching type into practice in the college classroom? What better way to teach the pre-service teacher how to modify and adapt standard instructional methods and assessment procedures in the general education classroom than for the college instructor to model this type of structure in education courses.

Issues Impacting the Revision of Teacher Education Programs

While interactive learning approaches and authentic instructional and evaluation methods may be pedagogically sound and more effective than more traditional models, college faculty are frequently reticent to modify their teaching to incorporate a more interactive learning environment. Reasons given for this reluctance include concern that (1) the amount of material covered may have to be reduced; (2) developing an interactive program will take too much time and energy; (3) classes are too large to effectively implement this type of instruction; (4) interactive learning methods require materials and equipment that are not easily accessible to faculty; and (5) the traditional lecture presentation is expected and that attempting to incorporate this type of learning involves too much risk, especially for faculty focused on attaining tenure status who fear lower student ratings, a loss of control, and disapproval of their colleagues (Bonwell et al, 1991).

These concerns, although valid, are not necessarily justified. To ensure that required content is covered and course objectives are met, instructors assign independent

reading and writing tasks to supplement and support topics covered during class time. They structure peer study (cooperative learning) groups which help to promote more complete understanding by sharing interpretations, experiences and ideas. Also, by using technological resources, such as distance learning, the Internet, e-mail and list serves, students can interact outside of the traditional classroom, share research ideas, and continue discussions by "chatting" with classmates or with other professionals and experts in the field. In order to facilitate discussion and promote ongoing interaction, e-mail can be accessed to share ideas, ask questions and do research. Electronic conferencing can sustain on-going conversations initiated in class, instructors can use modems to visit and supervise student internships doing field work at remote sites while continuing to communicate with class members between weekly meetings. Conferences can be interdisciplinary, promoting the connection between psychology, sociology, anthropology, etc. to the field of education. Access to the Internet can enhance student communication. Having students conference with students on different campuses provides diversity of thought and experience, enhances insight and broadens the scope of the learning experience. Interacting through list serve discussion groups provide opportunities for students to encounter people on the Internet with real-life experiences similar to those discussed in class, such as experts or practitioners in education and related fields. The World Wide Web is a resource for researching information on virtually any topic (Gillette, 1996).

Although additional time and effort may be required to initiate an active learning environment, preparing for an interactive class style should not require more time or energy than creating new lectures, assignments and tests which are necessary to keep up with

current research and best practices in the field. The issue of whether a large amount of students will impact on the effectiveness of an interactive learning environment can be addressed by grouping and creative assignments. Students can be divided into groups, perhaps by random assignment or, if appropriate, for the class topic, grouping can be structured by interest, skill, aptitude, subject area, teaching level focus, etc..

High tech equipment is not required to conduct an interactive learning environment yet education majors need to be up-to-date in their knowledge of available equipment and advances in technology. They need to be able to access state-of-the art resources and materials, be able to use technological equipment and understand how and when to utilize these resources for their research and to accommodate students with specific learning needs.

As with all new ventures, risk is involved. Faculty fear that introducing new and innovative strategies may "rock the boat" and that nontraditional methods may not be looked on favorably by students, colleagues or administration. Faculty evaluation procedures on most college campuses are imperfect and immature (Keig and Waggoner, 1994). Although the components of the tenure attainment process involves some form of student ratings, peer evaluation and administration assessment, these measures do not address, in depth, the qualities that are considered on that campus to be "effective teaching". If active learning models are not understood or commonly used, support for these innovations may be minimal, regardless of the evaluator's personal commitment to the philosophy. Overcoming these barriers may be challenging and require systemic change in regard to ascertaining support for developing a shared vision of the criteria for acceptable teaching, how is measured and by whom (Sutherland, 1996). More innovative evaluative methods, such as

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teaching portfolios (Seldin, 1991) and collegial assessment (Braskamp and Ory, 1994) allow faculty to explain and provide rationales for their chosen teaching approaches. As academic departments share common goals, agree on what constitutes effective teaching and provide mechanisms for critiquing and providing constructive feedback, they foster educational environments which encourages innovation in teaching (Braskamp et al, 1994).

Conclusion

Inclusion policies and practices necessitate a close examination of current educational practice in order to prepare new teachers for the trends already evident as we move into the new millennium. Teacher education university programs will be at the forefront in promoting state-of-the-art instructional procedures. The next generation of pre-service teachers must know how to make learning more relevant, interesting and meaningful to meet the varying needs of a more diverse population of students. They will be expected to design and implement authentic learning and assessment procedures, be familiar with the changes in educational legislation which will directly impact on them and have excellent interpersonal communication, consultation and collaboration skills.

Traditional teacher education programs in which the instructor lectures, assigns homework and administers examinations, which has been the standard at most universities for centuries, are in the process of reform. In an effort to practice what we preach, education faculty will be focusing on implementing best practices, incorporating the innovative methods and strategies that research indicates do work, and modeling ways that teachers can involve all students in varied, multi-sensory and interactive activities

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